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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/700,872	11/04/2003	Kabi P. Padhi	03-SIN-094	6611
7590	08/27/2007		EXAMINER	
Lisa K. Jorgenson STMicroelectronics, Inc. 1310 Electronics Drive Carrollton, TX 75006			MONIKANG, GEORGE C	
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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

**Office Action Summary**

Application No. 10/700,872	Applicant(s) PADHI ET AL.
Examiner George C. Monikang	Art Unit 2615

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1)  Responsive to communication(s) filed on 25 May 2007.
- 2a)  This action is **FINAL**.
- 2b)  This action is non-final.
- 3)  Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4)  Claim(s) 1-25 is/are pending in the application.
  - 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5)  Claim(s) \_\_\_\_\_ is/are allowed.
- 6)  Claim(s) 1-25 is/are rejected.
- 7)  Claim(s) \_\_\_\_\_ is/are objected to.
- 8)  Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9)  The specification is objected to by the Examiner.
- 10)  The drawing(s) filed on \_\_\_\_\_ is/are: a)  accepted or b)  objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11)  The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12)  Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a)  All b)  Some \* c)  None of:
    - 1.  Certified copies of the priority documents have been received.
    - 2.  Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    - 3.  Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1)  Notice of References Cited (PTO-892)
- 2)  Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3)  Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4)  Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5)  Notice of Informal Patent Application
- 6)  Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Response to Arguments***

Applicant's arguments, filed 5/25/2007, with respect to the rejection(s) of claim(s) 1-25 have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of *Ballesty et al.*

With regards to the double patenting rejection, the rejection stands as is because applicant submitted no amendments or reasons to overturn provisional double patenting rejection.

### ***Double Patenting***

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

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Claims 1, 10 and 18 (Application No. 10/700,872, hereinafter referred to as '872) is provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claim 1 of copending Application No. 10/955904 (Hereinafter referred to as '904). Although the conflicting claims are not identical, they are not patentably distinct from each other.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

The '904 claim 1 is a broader recitation of the same invention claimed in '872 claims 1, 10 and 18. Therefore, '872 claims 1, 10 and 18 are encompassed by '904 claim 1. It is critical that patents issuing from these applications be commonly owned to avoid potential licensees from owing license fees to two different parties.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.

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4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 1-4, 10-13 and 18-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ballesty et al, US Patent 6,944,510 B1, in view of Fischer et al, US Patent Pub. 2004/0093202 A1.

Re Claim 1, Ballesty et al discloses an apparatus, comprising: a cross correlator operable to receive a first audio signal and a second audio signal (abstract), the cross correlator also operable to cross correlate the first and second audio signals to produce a cross-correlated signal (abstract); but fails to disclose at least one parameter identifier operable to receive the cross-correlated signal and identify a plurality of parameters associated with at least one of the first and second audio signals (Fischer et al, para 0048: signatures are a plurality of parameters); and a score generator operable to receive the plurality of parameters and generate an indicator identifying an extent to which the first and second audio signals match (Fischer et al, para 0048: separation value). However Fischer et al does.

Taking the combined teachings of Ballesty et al and Fischer et al as a whole, one skilled in the art would have found it obvious to modify the apparatus, comprising: a cross correlator operable to receive a first audio signal and a second audio signal (abstract), the cross correlator also operable to cross correlate the first and second audio signals to produce a cross-correlated signal (abstract) of Ballesty et al with at least one parameter identifier operable to receive the cross-correlated signal and identify a plurality of parameters associated with at least one of the first and second audio signals (Fischer et al, para 0048: signatures are a plurality of parameters); and a

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score generator operable to receive the plurality of parameters and generate an indicator identifying an extent to which the first and second audio signals match (Fischer et al, para 0048: separation value) as taught in Fischer et al to reduce the computational load of the apparatus.

Re Claim 2, the combined teachings of Ballesty et al and Fischer et al disclose the apparatus of claim 1, wherein the at least one parameter identifier comprises: a correlation identifier operable to identify an amount of correlation between the first and second audio signals (Fischer et al, abstract); and a pitch variation identifier operable to identify a variation in pitch between the first and second audio signals (Fischer et al, fig. 5: 270; para 0059: the power variation is stored in db); but fails to disclose a delay identifier operable to identify a delay between the first and second audio signals (Fischer et al, para 0048).

Re Claim 3, the combined teachings of Ballesty et al and Fischer et al disclose the apparatus of claim 2, wherein: the delay identifier is operable to identify the delay by identifying a maximum value in the cross-correlated signal (Fischer et al, para 0059); the correlation identifier is operable to identify the amount of correlation by normalizing the cross-correlated signal (Fischer et al, abstract: digitizing); and the pitch variation identifier is operable to identify the variation in pitch by identifying a coincidental harmonic frequency using the cross-correlated signal (Fischer et al, para 0057).

Re Claim 4, the combined teachings of Ballesty et al and Fischer et al discloses the apparatus of claim 2, wherein the score generator is operable to generate the indicator by: generating a first score using the delay between the first and second audio

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signals and the amount of correlation between the first and second audio signals (Fischer et al, abstract); generating a second score using the variation in pitch between the first and second audio signals; and combining the first and second scores to produce a final score (Fischer et al, para 0048).

Claim 10 and 18 have been analyzed and rejected according to claim 1.

Claim 11 and 19 have been analyzed and rejected according to claim 2.

Claim 12 and 20 have been analyzed and rejected according to claim 3.

Claim 13 and 21 have been analyzed and rejected according to claim 4.

Claims 5-6, 14-15 and 22-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fischer et al, US Patent Pub. 2004/0093202 A1 and Ballesty et al, US Patent 6,944,510 B1 as applied to claim 1 above, in view of Asghar, US Patent 5,890,187, and further in view of Miyashiba et al, US Patent 5,774,851.

Re Claim 5, the combined teachings of Ballesty et al and Fischer et al disclose the apparatus of claim 1, wherein the first audio signal is associated with an input signal and the second audio signal is associated with a reference signal (abstract); but fails to disclose the following. However Asghar discloses comprising: a plurality of decimators operable to receive and decimate the input signal and the reference signal (fig. 3: 610; col. 4, lines 43-50). Miyashiba et al discloses a plurality of filters operable to filter at least one of the input signal, the reference signal, a decimated input signal, and a decimated reference signal (fig. 1: 2; col. 4, lines 8-15).

Taking the combined teachings of Ballesty et al, Fischer et al, Asghar and Miyashiba et al as a whole, one skilled in the art would have found it obvious to modify the apparatus of claim 1, wherein the first audio signal is associated with an input signal and the second audio signal is associated with a reference signal (Fischer et al, abstract) of Ballesty et al and Fischer et al with further comprising: a plurality of decimators operable to receive and decimate the input signal and the reference signal as taught in Asghar (fig. 3: 610; col. 4, lines 43-50); and a plurality of filters operable to filter at least one of the input signal, the reference signal, a decimated input signal, and a decimated reference signal as taught in Miyashiba et al (fig. 1: 2; col. 4, lines 8-15) so that noise could be cancelled from each audio signal individually to provide high quality sounds to be compressed and compared.

Re Claim 6, the combined teachings of Ballesty et al, Fischer et al, Asghar and Miyashiba et al disclose the apparatus of claim 5, wherein the plurality of filters comprise: a first anti-aliasing low pass filter operable to filter the input signal (Asghar, fig. 3: 610; col. 4, lines: 43-50: decimation of audio signals is a 2-step process that includes a low-pass anti-aliasing filter) a first of the decimators operable to decimate the filtered input signal (Asghar, fig. 3: 610; col. 4, lines 43-50); a second anti-aliasing low pass filter operable to filter the reference signal (Asghar, fig. 3: 610; col. 4, lines: 43-50: decimation of audio signals is a 2-step process that includes a low-pass anti-aliasing filter), a second of the decimators operable to decimate the filtered reference signal (Asghar, fig. 3: 610; col. 4, lines 43-50); a first band pass filter operable to filter the decimated input signal to produce the first audio signal (Miyashiba et al, fig. 1: 2; col. 4,



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lines 8-15); and a second band pass filter operable to filter the decimated reference signal to produce the second audio signal (Miyashiba et al, fig. 1: 2; col. 4, lines 8-15).

Official notice is taken that both the concept and advantages of providing a plurality of decimators well known in the art. It would have been obvious to provide a plurality of decimators to compress each audio signal individually.

Claim 14 and 22 have been analyzed and rejected according to claim 5.

Claim 15 and 23 have been analyzed and rejected according to claim 6.

Claims 7, 16 and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fischer et al, US Patent Pub. 2004/0093202 A1 and Ballesty et al, US Patent 6,944,510 B1 as applied to claim 1 above, in view of Miyashiba et al, US Patent 5,774,851.

Re Claim 7, Ballesty et al and Fischer et al disclose the apparatus of claim 1 wherein the score generator is operable to generate the indicator (abstract) but fails to disclose further comprising a voice activity detector operable to detect a voice in the input signal. However, Miyashiba et al does (abstract: speech recognition pattern).

Taking the combined teachings of Ballesty et al, Fischer et al and Miyashiba et al as a whole, one skilled in the art would have found it obvious to modify the apparatus of claim 1 wherein the score generator is operable to generate the indicator (Fischer et al, abstract) of Ballesty et al and Fischer et al with further comprising a voice activity detector operable to detect a voice in the input signal as taught in Miyashiba et al

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(abstract: speech recognition pattern) so that the apparatus could identify the speech patterns of the signals to determine the differences.

Claim 16 and 24 have been analyzed and rejected according to claim 7.

Claims 8, 17 and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fischer et al, US Patent Pub. 2004/0093202 A1 and Ballesty et al, US Patent 6,944,510 B1 as applied to claim 1 above, in view of Miyasaka, US Patent 5,845,247.

Re Claim 8, Ballesty et al and Fischer et al discloses the apparatus of claim 1, but fails to disclose wherein: each of the first and second audio signals comprises a plurality of frames; and the cross correlator is operable to correlate one frame from the first audio signal and multiple frames from the second audio signal to produce the cross-correlated signal. However, Miyasaka does (col. 2, lines 8-16).

Taking the combined teachings of Ballesty et al, Fischer et al and Miyasaka as a whole, one skilled in the art would have found it obvious to modify the apparatus of Ballesty et al and Fischer et al with wherein: each of the first and second audio signals comprises a plurality of frames; and the cross correlator is operable to correlate one frame from the first audio signal and multiple frames from the second audio signal to produce the cross-correlated signal as taught in Miyasaka (col. 2, lines 8-16) so that the frame energies could be determined.

Re Claim 9, the combined teachings of Ballesty et al, Fischer et al and Miyasaka disclose the apparatus of claim 8, wherein the indicator identifies an extent to which the

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one frame from the first audio signal matches at least a portion of the multiple frames from the second audio signal (*Fischer et al. abstract*).

Claim 17 and 25 have been analyzed and rejected according to claim 8.

### Contact


Any inquiry concerning this communication or earlier communications from the examiner should be directed to George C. Monikang whose telephone number is 571-270-1190. The examiner can normally be reached on M-F. alt Fri. Off 7:30am-5:00pm (est).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chin Vivian can be reached on 571-272-7848. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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2/16/2007

  
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